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COMPARISON OF SOVIET SOLID ROCKET MOTOR TEST FACILITIES AT KAMENSK-SHAKHTINSKIY, USSR AND NASIK, INDIA

1. THE GOVERNMENT OF THE UNION OF SOVIET SOCIALIST REPUBLICS AND THE REPUBLIC OF INDIA CONCLUDED AN AGREEMENT IN MOSCOW DURING AUGUST, 1962, FOR THE MANUFACTURE, UNDER LICENSE, OF THE MODIFIED SINGLE ENGINE FIGHTER AIRCRAFT TYPE MIG-21F-13. UNDER THIS AGREEMENT THE USSR WAS TO HAND OVER TO INDIA, COMPLETE DOCUMENTATION REQUIRED FOR THE PRODUCTION OF A MODIFIED MIG-21F-13 AIRCRAFT, ENGINE, MISSILE SYSTEM, AIRBORNE RADAR AND OTHER AIRCRAFT EQUIPMENT AS WELL AS THE TECHNICAL DOCUMENTATION FOR THE TEST STANDS, JIGS AND SPECIAL TOOLS, ETC.

2. IN AUGUST 1963 THE INDIAN GOVERNMENT FORMED A STATE OWNED COMPANY CALLED AERONAUTICS INDIA, LTD., TO MANUFACTURE THE MIG JET FIGHTERS AND OTHER AIRCRAFT. A JET ENGINE FACTORY WAS TO BE BUILT AT KORAPUT, THE AIRCRAFT AND MISSILE PLANT AT NASIK, AND THE AIRCRAFT ELECTRONICS EQUIPMENT PLANT IN HYDERABAD.

3. IN APRIL 1964, AS A RESULT OF TALKS BETWEEN SOVIET TECHNICAL ADVISORS AND AN INDIAN TEAM COMPOSED OF EXPERTS FROM AERONAUTICS INDIA LTD., IT WAS DECIDED TO LOCATE THE MANUFACTURING SITE OF THE K-13 (ATOLL)

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AIR-TO-AIR MISSILE NEAR NASIK. TENTATIVE PRODUCTION PLANS CALLED FOR INITIAL PRODUCTION OF APPROXIMATELY 1,350 MISSILES PER YEAR WITH AN EVENTUAL ANNUAL PRODUCTION OF APPROXIMATELY 2,000 MISSILES PER YEAR. THE GUIDED MISSILE DIVISION AT NASIK WOULD MANUFACTURE THE ROCKET MOTOR CASE, THE WARHEAD CASE, AND THE CONTROL SECTION WHILE THE MANUFACTURE OF THE INFRA-RED HEAD WOULD TAKE PLACE AT AN OPTICAL FACTORY AT DEHRA DIN, AND A PLANT AT KIRKEE WOULD MANUFACTURE THE WARHEAD AND ITS FILLING 25

25 EACH MISSILE WOULD REQUIRE 20 KILOGRAMS OF ROCKET MOTOR PROPELLANT WHICH THE USSR WOULD PROVIDE. THE NASIK PLANT WOULD BE RESPONSIBLE FOR TESTING THE ROCKET MOTOR AND PLANS FOR THIS INSTALLATION HAVE BEEN PROPOSED.

4. CONSTRUCTION OF THE NASIK AIRFRAME PLANT REPORTEDLY BEGAN IN EARLY 1964, WAS SLOWED DOWN IN DECEMBER 1964 AND WAS REPORTEDLY SPEEDED UP IN MARCH 1965 AS SOVIET RELATIONS ON THE MIG PROJECT BRIGHTENED AGAIN. BY MARCH 1965, SOVIET TECHNICIANS FOR THE K-13 PROJECT WERE REPORTED TO BE IN INDIA.

5. KH/COLLATERAL: THE PROJECT REPORT ON PLANS FOR THE TECHNOLOGICAL LAYOUT OF THE GUIDED MISSILE DIVISION OF THE NASIK AIRCRAFT AND

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MISSILE PLANT REVEALS THAT THE K-13 STATIC TEST SITE IS COMPARABLE TO SITES IN THE USSR WHICH HAVE BEEN IDENTIFIED AS PROBABLE SOLID ROCKET MOTOR TEST FACILITIES. THE PURPOSE OF THE NASIK TEST RANGE WAS FOR CARRYING OUT SELECTIVE, DYNAMIC, CLIMATIC, AND FIRE TESTING OF THE ENGINES IN ACCORDANCE WITH ESTABLISHED TECHNICAL CONDITIONS. THE TEST RANGE CONSISTS OF: A LABORATORY FOR THE DYNAMIC TESTING OF ENGINES, THE FIRE TESTING CELL WITH CONNECTED PRODUCTION, AN AUXILIARY REVETTED STRUCTURE FOR COMBUSTIBLE STORAGE, AND AN ADMINISTRATIVE BUILDING. SPECIFICATIONS ALSO CONSIDERED THE DANGER OF ACCIDENTS DURING MOTOR TESTING AND THEREFORE THE TEST AREA WAS TO BE LOCATED IN A REMOTE AREA AT LEAST 1 KM FROM THE NEAREST POPULATED AREA. A DETAILED FUNCTIONAL ANALYSIS AND A SET OF DETAILED PLANS WAS INCLUDED FOR EACH BUILDING. A CALCULATION SHEET FOR WORK PLACES FOR THE ENGINE TESTING BASE REVEALED THAT APPROXIMATELY 56 STATIC TESTS PER ANNUM WERE REQUIRED AT THE ONSET OF OPERATIONS.

6. KH/COLLATERAL: A DETAILED COMPARISON OF THE PROPOSED NASIK TEST FACILITY WITH THE TEST FACILITY AT KAMENSK-SHAKHTENSHIY REVEALED THE COMPARABLE BUNKER/DEFLECTOR (BOTH OF WHICH HAD AN APPROXIMATE 30° DEFLECTION ANGLES), AN AIR INTAKE IN THE REAR OF THE TEST BOX, THE ASSOCIATED COMBUSTIBLE STORES FACILITY, AND COMPARABLE LAYOUT OF BUILDINGS WITHIN THE TEST AREA. (KH PHOTOGRAP

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23 April 1965

PREPARED BY: CSD/Research Branch

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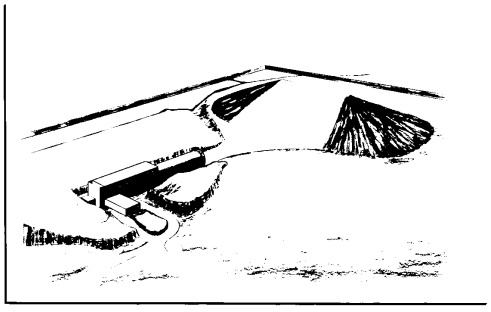
TEST FACILITY KAMENSK-SHAKHTINSKIY, USSR



TEST FACILITY NASIK, INDIA

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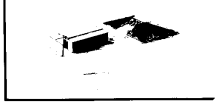

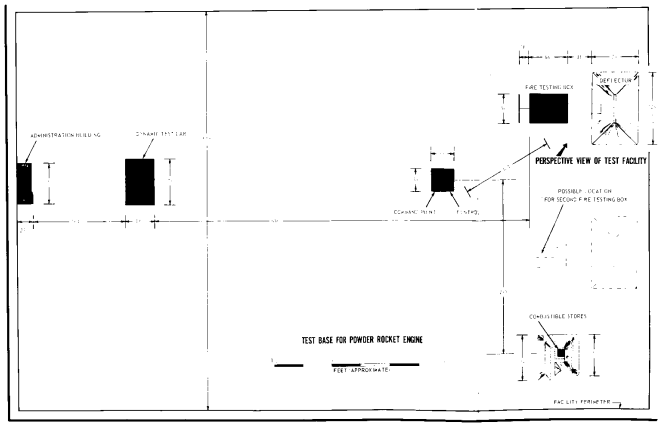

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